

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)
)
Framework for Next Generation 911 Deployment) PS Docket No. 10-255
)

COMMENTS OF APCO

The Association of Public-Safety Communications Officials-International, Inc. (“APCO”) hereby submits the following comments in response to the Commission’s *Notice of Inquiry*, FCC 10-200 (released December 21, 2010) (“*NOR*”) in the above-captioned proceeding regarding a framework for Next Generation 911 (“NG911”) deployment.

Founded in 1935, APCO is the nation's oldest and largest public safety communications organization. Most APCO members are state or local government employees who manage and operate communications systems -- including Public Safety Answering Points (PSAPs), dispatch centers, radio networks, and information technology -- for law enforcement, fire, emergency medical, forestry conservation, highway maintenance, disaster relief, and other public safety agencies. APCO has long been involved Commission proceedings regarding 911 capability and other aspects of public safety communications.

APCO shares the Commission's goal of ensuring that the public ultimately has the ability to transmit a wide variety of media, including text, photos and video, to PSAPs when reporting emergencies. PSAPs must first have the NG911 technology, equipment, operational procedures, and staffing to receive and digest that information, plus the ability to forward relevant media to first responders in the field through public safety wireless broadband networks. A critical

element, not addressed in the *NOI*, is the need to explore the funding sources necessary to deploy NG911, as the current 911 funding mechanisms in most jurisdictions will be grossly inadequate.

APCO members and staff have been very active within the FCC's Communications Security, Reliability, and Interoperability Council ("CSRIC"), including CSRIC Work Group 4B, which has prepared a report addressing in detail many of the NG911 issues discussed in the *NOI*. The 4B report has been presented to the CSRIC for adoption at its March 14, 2011, meeting. Rather than replicate the extensive effort that went into the 4B report, these comments will at times summarize APCO's views on the most critical issues and defer more detailed discussion to the final CSRIC report.

NG911 Capabilities and Applications

-NG911 Media types

The Commission correctly notes that integration of multimedia (text, images and video) communication into 911 is becoming, or in some type cases has already become, an expectation of the public and will need to be a critical component of NG911. There has been significant discussion within CSRIC Work Group 4B and elsewhere on the reliability and feasibility of using text-based message services such as Short Message Service (SMS). As discussed in the CSRIC 4B report, some standards already exist for use of Real Time Text (RTT) with 911 services. There are legitimate concerns with using *non*-RTT based text communication for 911, though steps are described in the 4B report that can be taken now to explore the eventual integration of SMS and other instant messaging services for 911.

Imagery and video will increase the potential for PSAPs to better assess the status of an incident, *if* implemented in conjunction with a public education campaign that carefully sets consumer expectations. Significant training will also be required for PSAPs to ensure that

telecommunicators are able to effectively interpret, manage and utilize the information being received via new methods of communication.

As discussed in the *NOI*, there are many potential sources of non-voice data that could be transmitted to NG911-capable PSAPs. APCO believes that technical standards must be in place to ensure that these many sources of data can be effectively used and interpreted by emergency service entities.

-Primary and Secondary Media

The *NOI* presents a useful dichotomy between “primary” and “secondary” forms of communication on NG911 networks. Primary media, which will certainly include voice, must be able to provide accurate automatic 911 location of the caller or calling device to a degree that is the same as or better than what is required now for wireless calls. The form of communication should be irrelevant and largely transparent to callers. The public cannot be expected to be cognizant of which media will automatically provide 911 location and which will not, especially during an emergency. Therefore, it would be unwise to pursue email or social networking as a “primary” path for 911 unless and until automatic location can also be provided for those forms of communications. The matter requires further study in an advisory group as suggested in the CSRIC 4C report.

The *NOI* raises a question as to whether *all* PSAPs should someday be required to accept *all* media types. We believe that day is far into the future. Expanding the type of media that can be delivered to 911 will require significant funds to upgrade the equipment at PSAPs and provide necessary staffing and training to manage this new environment. The CSRIC 4B report provides additional insight on the changes that will be needed to address these and other related issues.

-SMS

As noted in the *NOI*, there are a number of Quality of Service concerns with the use of SMS to 911. The CSRIC 4B and 4C reports provide detail on these issues and efforts to find solutions. However, it is worth noting that the use of SMS text appears may be declining in favor of other media that allows two-way communication, such as instant messaging.

-NG911 Applications for Persons with Disabilities and Special Needs.

RTT has the potential benefit of allowing hearing-impaired or speech-impaired individuals to communicate directly, in real time, with an NG911 PSAP, rather than going through an intermediary service. However, conventional TTY access should continue to be supported in NG911 as there will be individuals who continue to rely on legacy devices via the PSTN for many years.

Non-English speaking callers will expect to be able to use all of the same devices and media types used by those who rely on English as their primary language. Origination networks must be able to transmit a language preference to the ESInet when a call is routed. The current translation services available to PSAPs, however, do not always provide assistance with text or video based communications. Research must also be conducted to determine whether most PSAP personnel able to converse verbally in a secondary language also have the necessary skills and tools to converse via text. PSAP equipment in these cases may also require modifications to allow for text-based translation to a foreign language.

The *NOI* raises the issue of sharing of medical and other information that may be transmitted to a PSAP in an NG911 environment. PSAPs should not be placed in a position of screening all incoming data for privacy-related issues. Mechanisms must be implemented to

assure that data is authorized before it is transmitted to PSAPs or passed on to other authorized entities such as first responders or hospitals.

Network Architecture

As noted in the NOI, technology is continuing to provide innovative communication capabilities within numerous non-traditional devices. However, specifying which IP or cellular devices should or should not have the ability to call 9-1-1 is premature. The type of device allowed is secondary to assuring that the device is identifiable by the access network and that the access network (or device itself) be capable of providing accurate 9-1-1 location. The public should not be expected to discern whether or not a particular device is capable of placing a 9-1-1 call.

The Commission seeks comment in paragraph 53 regarding the criteria it had established for determining which licensees should be subject to E911 obligations, and specifically asks about hot-spot providers. Such an access provider is only aware of the specific point in which it has provided broadband or internet access to a structure. The specific location of Wi-Fi access points (hot-spots) within that structure is only known to the structure's owner (i.e. the coffee shop, hotel or parks officials). Therefore, NG911 location determination will, to a degree, be dependent on these non-traditional entities providing this location information to the proper authority. However, absent legislative or regulatory intervention, there may be little impetus for these stakeholders to fulfill their role in NG911 deployment.

Virtual PSAPs

The concept of virtual PSAPs as discussed in the *NOI* can vary widely, but does present unique opportunities and challenges to manage emergency call handling more efficiently. The

technological precedent for virtualization already exists in today's CAD systems in the form of remote connectivity and mobile data applications that have become commonplace in many regions. Virtual PSAPs are most likely to initially be implemented and used by agencies that have existing cooperative agreements. Standards work is underway within APCO and NENA to provide a standardized method by which incident information can be shared between disparate CAD systems in any NG911 PSAP. However, additional challenges may be encountered when attempting to dispatch incidents from virtual PSAPs as radio interfaces may not be readily available. APCO is working with several agencies to begin work on drafting standards for Radio- Over-IP interfaces for NG911. Security requirements may pose limitations on the staffing and physical location of a virtual PSAP.

As noted in paragraph 57 of the *NOI*, NG911 will likely require certain new network infrastructure components, such as a national directory "forest guide" function as well as functional elements that can assure proper authentication for sensitive information. Implementation and management of national level elements or networks for emergency services merits further discussion and research to identify the specific requirements for such elements and to ensure that competitive interests do not drive decisions that are not in the best long term interest of local stakeholders.

APCO is very concerned with the potential of allowing for non-human initiated devices to deliver information to PSAPs. If not regulated and screened, calls from such devices have the potential to overwhelm PSAPs and prevent responses to other legitimate callers. Today's alarm systems are good example. Without central station call centers to screen alarms, PSAPs would be inundated with false alarms triggered by human error, wind, or equipment malfunction. Worse, first responders would be dispatched to answer identifiable false alarms, potentially

diverting emergency resources from more critical life threatening situations. APCO has worked closely with the Alarm Industry Communications Committee (AICC), Central Station Alarm Association (CSAA) and International Association of Chiefs of Police (IACP) to develop efficient means of providing screened alarm information to PSAPs. The same approach must be followed in the NG911 environment where many more types of non-human initiated devices will be in the marketplace.

N11

Integration of N11 services in NG911 systems merits consideration, provided that interconnection of those N11 services does not negatively impact the receipt or transmission of emergency calls. The mission of some services, such as 311 and Poison Control, may be more tightly integrated with 911 in comparison to other N11 services. Common technology platforms for some of these services may present an opportunity for cost savings, interoperability and improved service. However, integration must take into consideration the higher security requirements of NG911 as well as the need to prioritize and isolate ESInet traffic appropriately for emergencies.

Auxiliary data

Additional data (such as medical history) has enormous potential to improve the quality of call handling. However, there are numerous issues that must be taken into account with the provisioning and use of additional data in NG911, and it is premature to decide whether or not an application service provider or access provider should be mandated to supply these services. Among other steps, standards must be developed and employed to format, classify and intelligently aggregate information from diverse sources prior to use within a PSAP.

MLTS

The CSRIC 4B and 4C reports include a useful discussions of MLTS-related issues for 911. The NENA i3 architecture for NG911 provides for functional elements (the Location Information Server and Location Validation Function) that will replace conventional MSAG and ALI. If used to its fullest extent, MLTS information can be stored and validated not only for PSTN devices but also for IP devices such as Wi-Fi hotspots. However, absent a regulatory framework that mandates the use of these types of functional elements or mandates the provisioning of this location data, there is little incentive for improving the current state of MLTS-911 capability.

NG911 Implementation/Transition

The issues addressed in paragraphs 64-65 of the *NOI* are discussed in detail in the CSRIC 4B report. Paragraph 66 of the *NOI* discusses disparate PSAP capabilities, which can be addressed to some degree by standardized gateways that will process calls though to legacy PSAPs and also facilitate the transfer of calls from an NG911 PSAP or ESInet to a legacy PSAP (and *vice versa*). Deadlines to deploy NG911, as discussed in the *NOI*, would be premature until there is tangible experience with NG911 implementations (and any issues) in several areas of the country.

Access providers and service providers must maintain an ability to advise a caller that their attempt to contact 911 via non-voice media is not supported in areas where these calls cannot be processed. This will present challenges and confusion to the public. The transition to NG911 must therefore be accompanied by public education and realistic expectations. Federal funding will likely be necessary to assure that this education takes place.

The issue of specifying allowable media types is especially challenging. There will be little control over what is installed on a user device. However, it is unrealistic to expect that 911 systems be able to accept “anything that is thrown their way.” The proliferation of applications available to the general public continues and is already presenting challenges to PSAP’s.

Fallback routing may not be feasible during the transition to NG911 as the receiving agency may have the capability to converse with callers, but may not be able to dispatch resources to assist them. Fallback routing to a specified regional PSAP requires further investigation and discussion before any decisive action can be addressed or proposed. The term “NG911 enabled device” is somewhat misleading in this context, though it would be ideal if devices were in fact able to identify the capabilities of the 911 system to which their call will be routed.

The issues of liability referenced by the FCC in paragraphs 71-73 are all valid and legitimate concerns. Liability merits research by a separate advisory group that can carefully identify and classify the issues that may be faced. Liability protection will be needed in some cases, but specifying when that should occur will require much discussion between involved stakeholders. The FCC should consider soliciting insight from non-traditional stakeholders such as the alarm industry, medical records vendors and video relay services to identify areas of similar liability that they have faced and already addressed.

There may also be merit to considering a gradual approach to integrating the many sources of data and media into an NG911 system rather than mandate PSAPs to accept “everything” immediately upon implementation of an ESInet and NG911 functional elements. This approach, while potentially the most practical, will again require a significant public education element.

One area of “liability” that may not be on the FCC radar is the additional time that it will take PSAP call takers and dispatchers to process multimedia and other forms of data that are sent with calls. It is very possible, especially during transition to NG911, that there will be impact to the call answering statistics at these PSAPs. Callers reporting emergencies may not be able to be answered as quickly as they have come to expect, and PSAPs are not likely to have funds to hire additional staff. This will alter nationally accepted call taking and processing benchmark times and could impact state requirements that base funding on call answering times. This situation creates a unique “liability” (which may be more political than legal) that should be part of the ongoing impact analysis.

Privacy in NG911, discussed in paragraph 74 of the *NOI*, will be addressed via security authorization and access protocols. Subscription services, such as telematics services and medical alarms, must advise their clients that information they provide may be transmitted to PSAPs. Regardless of how these agreements are put in place, the PSAPs receiving additional data must be able to assume that the data has been authorized by the owner. PSAPs cannot be placed in the position of having to decide whether or not they have received confidential information that should not have been delivered to them.

Local policies and laws often govern what information can be shared outside of the emergency service agreements. Maintaining the integrity in this process will require identification of who “owns” the additional data that the PSAP receives; *i.e.* the PSAP may “own” the record of the call but the caller “owns” their medical information. Some laws may need to be re-crafted to account for inclusion of data that the PSAP does not own. Accessing information from a “virtual PSAP” should follow the same authorization rights and processes set

up for the agency; no differences should apply. Virtual workers would sign into and be part of the ESInet as are any other worker in a brick and mortar facility.

Federal regulations may be required to ensure that IP- based location, discussed in paragraph 76 of the *NOI*, is able to be passed to 911 by access providers. Absent federal regulation, access providers have little incentive to provide this data. Access providers, ISPs and broadband providers currently have complex relationships that allow them to determine the location of user devices on their networks. The Location Information Server (LIS) is the functional element in the i3 architecture through which access providers would provision this information. The i3 architecture includes a standardized interface for validating locations provisioned to the LIS against authoritative data from the 911 authority (similar to MSAG validation today).

The nature of NG911 increases the risk of cyber-attacks, viruses and other network based intrusions. The i3 architecture and other documents published by CSRIC, NENA and the Internet Engineering Task Force (IETF) attempt to take into account these considerations.

The FCC should work in conjunction with APCO, NENA and the National 911 Program office to facilitate the best approach to public education on NG911 capabilities and limitations. Funding for public education will need to be provided from sources other than public safety. Setting the correct consumer expectations is critical and needs to be undertaken as soon as possible to keep up with technological changes. Making use of all media outlets, even those not traditionally associated with 9-1-1 public education, should be considered.

CONCLUSION

APCO urges the FCC proceed with appropriate steps to promote a viable framework for NG911, consistent with the comments set forth above.

Respectfully submitted,

/s/

Robert M. Gurss
Regulatory Counsel
APCO International
(202) 236-1743
gurssr@apcomail.org

Kathy McMahon
APCO Technical Services Manager

APCO Government Affairs Office
1426 Prince Street
Alexandria, VA 22314
(571) 312-4400

February 28, 2011